DOCUMENT RESUME

ED 288 721 SE 048 733

AUTHOR Ezkovich, Jan, Comp.
TITLE The Future: Science & Technology Enter the 21st Century. LC Science Tracer Bullet.
INSTITUTION Library of Congress, Washington, D.C. National Referral Center for Science and Technology.
REPORT NO TB-87-8
PUB DATE Sep 87
NOTE 9p.
PUB TYPE Reference Materials - Bibliographies (131)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Books; Citations (References); *Futures (of Society); Guides; Periodicals; *Reference Materials; *Science and Society; *Technology; Textbooks

ABSTRACT

Innovations in communications, space, medicine, and other technologies are sure to have an impact on the world of tomorrow and the way we view that world. This guide to the literature on future technology is not intended to be a comprehensive bibliography. It is designed to provide the reader with a set of resources that can be used to focus on the topic. The document lists the subject headings used by the Library of Congress in cataloging information on science and technology. It also contains citations of materials categorized as: (1) brief introductions; (2) basic texts; (3) additional titles; (4) handbooks and encyclopedias; (5) other bibliographies; (6) conference proceedings; (7) government publications; (8) abstracting and indexing services; (9) journal articles; (10) technical reports; and (11) additional sources of information. (TW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

LC Science Tracer Bullet

Science Reference Section, Science and Technology Division
Library of Congress, 10 First Street, S.E., Washington, D.C. 20540

ISSN 0090-5232

ED288721

The Future: Science & Technology Enter the 21st Century

Compiled by Jan Ezkovich

TB 87-8 September 1987

SCOPE: Once the sole territory of fortune tellers and soothsayers, the future is now open to contemplation by everyone. Innovations in communications, space, medicine, and other technologies are sure to have an impact on the world of tomorrow and the way we view that world. Scientists, businesses and governments project future developments by extrapolating from current trends, using methods that range from simple, informed hunches to complex computer analysis. In this way, science fiction becomes science reality.

This guide is intended for those who wish to review what authors in various fields have to say about future technology. Not intended as a comprehensive bibliography, this guide is designed--as the name of the series implies--to put the reader "on target."

BRIEF INTRODUCTIONS

Branscomb, Lewis M. Science in 2006. American scientist, v. 74, Nov./Dec. 1986: 650-658. LJ85.S502

Future technology. In An Age of innovation: the world of electronics 1930-2000. By the editors of Electronics. New York, McGraw-Hill, c1981. p. 220-235. TK7809.A33 1981*

Tindell, J. P. The art and science of futuring. Parks & recreation, v. 21, May 1986: 32-36. SB481.A1P35

SUBJECT HEADINGS used by the Library of Congress, under which books on future technology can be located in most card, book, and online catalogs, include the following:

TECHNOLOGICAL FORECASTING (Highly relevant)
TECHNOLOGICAL INNOVATIONS (Highly relevant)
TWENTIETH CENTURY--FORECASTS (Highly relevant)
TWENTY-FIRST CENTURY--FORECASTS (Highly relevant)
AGRICULTURAL INNOVATIONS (Relevant)

*Available in the reference collection, Science Reading Room

SE 048 733

BEST COPY AVAILABLE

MEDICAL INNOVATIONS (Relevant)
INVENTIONS (Related)
FORECASTING (More general)
TECHNOLOGY AND CIVILIZATION (More general)

See also subdivisions FORECASTING and TECHNOLOGICAL INNOVATIONS under specific subjects, e.g., TELECOMMUNICATIONS--TECHNOLOGICAL INNOVATIONS, AUTOMOBILES--UNITED STATES--TECHNOLOGICAL INNOVATIONS, FOOD SUPPLY--FORECASTING, CONSTRUCTION INDUSTRY--UNITED STATES--FORECASTING.

Where machine files allow key-word searching, one can locate books with future or twenty-first century in their titles by combining these words with the subject wanted, e.g., metals future, farming twenty-first century.

BASIC TEXTS

Clarke, Arthur C. Profiles of the future: an inquiry into the limits of the possible. New York, Holt, Rinehart and Winston, 1984. 251 p. T20.C54 1984

Davidson, Frank P., and John Stuart Cox. Macro: a clear vision of how science and technology will shape our future. New York, Morrow, 1983. 450 p. TA153.D38 1983*

Drexler, K. Eric. Engines of creation. Garden City, N.Y., Anchor Press/Doubleday, 1986. 298 p. T47.D74 1986
Bibliography: p. 243-283.

An Introduction to technological forecasting. 2nd ed. Edited by Joseph Paul Martino. London, New York, Gordon and Breach, 1987. 118 p. T174.I59 1987

Kerrod, Robin. The world of tomorrow. New York, Gallery Press, 1980. 92 p. CB161.K47 1980
Presents projections, based on present-day technology, of life in the future, including how world problems may be overcome and how people may change and extend their environment.
Intended for younger readers.

Martin, James. Technology's crucible: an exploration of the explosive impact of technology on society during the next four decades. Englewood Cliffs, N.J., Prentice-Hall, c1987. 206 p. T20.M348 1987

Stableford, Brian, and David Langford. The third millenium: a history of the world: AD 2000-3000. New York, Knopf, c1985. 224 p. CB161.S68 1985

SPECIALIZED TITLES

Advanced technology warfare: a detailed study of the latest weapons and techniques for warfare today and into the 21st century, by Richard S. Friedman and others. New York, Harmony Books, c1985. 208 p. UF500.A38 1985*

Agriculture 2000: a look at the future. A study by Columbus Division, Battelle Memorial Institute. Sponsored by the Production Credit Associations on their 50th anniversary. Columbus, Battelle Press, c1983. 183 p. HD1761.A6226 1983*

Flaningam, Carl. The future of American agriculture: a critical overview of the agricultural policy of the United States. Lincolnwood, Ill., National Textbook Company, c1986. 234 p. HD1761.F57 1986
Bibliography: p. 118-124.

Gross, Lynne S. The new television technologies. 2nd ed. Dubuque, Iowa, W. C. Brown Publishers, c1986. 240 p. TK6643.G7 1986

Lambert, Mark. Medicine in the future. New York, Bookwright Press, 1986. 48 p. RA418.5.M4L36 1986
Bibliography: p. 46.

McDonough, Thomas R. Space: the next twenty-five years. New York, Wiley, 1987. 237 p. TL790.M37 1987*
Bibliography: p. 221-228.

Pharmaceuticals in the year 2000: the changing context for drug R&D. Edited by Clement Bezold. Alexandria, Va., Institute for Alternative Futures, c1983. 154 p. HD9666.5.P48 1983*
Contains papers presented at a conference held Mar. 3-4, 1982, in Millwood, Va., sponsored by the Institute for Alternative Futures.

Seiffert, Ulrich, and Peter Walzer. The future for automotive technology. London, Dover, N.H., F. Pinter, 1984. 197 p.
TL240.S357 1984

Technology and the future of health care. Edited by John B. McKinlay. Cambridge, Mass., MIT Press, c1982. 454 p. (Milbank reader, 8)
RA418.5.M4T4 1982
Selections from Milbank Memorial Fund quarterly.

RELATED TITLES

Ardley, Neil. Our future needs. London, New York, Franklin Watts, 1982. 37 p. T174.A68 1982
Discusses future possibilities in genetic engineering, energy sources, and other technological areas, based on current research and technologies.
Intended for younger readers.

Kupperman, Robert H. Technological advances and consequent dangers: growing threats to civilization. Washington, Center for Strategic and International Studies, Georgetown University, c1984. 11 p. (Significant issues series, v. 6, no. 1) T14.5.K87 1984
"A paper presented at the International Symposium on the Coevolution of Man and Biosphere, Helsinki, Finland, September 1983."

Leontief, Wassily W., and Faye Duchin. The future impact of automation on workers. New York, Oxford University Press, 1986. 170 p. HD5724.L38 1986

Martino, Joseph Paul. Technological forecasting for decision making. 2nd ed. New York, North-Holland, c1983. 385 p. T174.M38 1983*

HANDBOOKS, ENCYCLOPEDIAS and DIRECTORIES

Hord, R. Michael. CRC handbook of NASA future missions and payloads. Boca Raton, Fla., CRC Press, 1987? 2 v. TL862.U55H67 1987*
"Derived from the fifth issue of the NASA space systems technology model published in early 1984."

Insight, the Marshall Cavendish encyclopedia of science and the future. New York, Cavendish, c1982. 6 v. T47.I57 1982*

National emerging industries resourceguide. Dileep Rao, editor. Minneapolis, InterFinance Corp., c1986. 368, 124 p. HD62.5.N38 1986*

World Future Society. The Future: a guide to information sources. 2nd ed. Washington, World Future Society, c1979. 722 p. CB158.W67 1979*

Yearbook of science and the future. 1975- Chicago, Encyclopaedia Britannica. Q9.B78*

BIBLIOGRAPHIES

Future survey. v. 1- 1979- Washington, World Future Society. HM24.F84
"A monthly abstract of books, articles and reports concerning forecasts, trends, and ideas about the future."
Current issues available in N&CPR.

Roysdon, Christine, and Judith Mistichelli. Futures resources: a library guide for clairvoyants. Monticello, Ill., Council of Planning Librarians, 1978. 24 p. (Council of Planning Librarians. Exchange bibliography, no. 1472) Z5942.C68 no. 1472

GOVERNMENT PUBLICATIONS

Agriculture in the future: an outlook for the 1980's and beyond. Washington, U.S. Dept. of Agriculture, Economic Research Service, 1984. 62 p. (Agriculture information bulletin, no. 484) S21.A74 no. 484

Future information technology--1984 telecommunications. Edited by Peg Kay and Patricia Powell. Gaithersburg, Md., U.S. Dept. of Commerce, National Bureau of Standards; Washington, U.S. Govt. Print. Off., 1984. 331 p. (NBS special publication, 500-119) QC100.U57 no. 500-119

Global 2000 Study (U.S.). The global 2000 report to the President of the U.S., entering the 21st century: a report. Prepared by the Council on Environmental Quality and the Department of State. Gerald O. Barney, study director. New York, Pergamon Press, 1980. 2 v. HC79.E5G59 1980*

United States. Congress. House. Committee on Science and Technology. Oversight review of the five-year outlook report on science and technology: hearing ... Ninety-eighth Congress, second session, January 24, 1984. Washington, U.S. Govt. Print. Off., 1985. 303 p. KF27.S39 1984e

United States. Congress. House. Committee on Science and Technology. Subcommittee on Investigations and Oversight. New technology and the future of steel: hearing ... Ninety-ninth Congress, first session, July 22, 1985. Washington, U.S. Govt. Print. Off., 1985. 541 p. KF27.S3975 1985b

United States Congress. House. Committee on Science and Technology. Subcommittee on Space Science and Applications. Space science: past, present, and future: hearings ... Ninety-ninth Congress, first session, October 8, 9, 10, 1985. Washington, U.S. Govt. Print. Off., 1986. 207 p. KF27.S3995 1985d

----- Space science: past, present, and future: report. Prepared by the Subcommittee on Space Science and Applications, transmitted to the Committee on Science and Technology, House of Representatives, Ninety-ninth Congress, second session. Washington, U.S. Govt. Print. Off., 1986. 37 p. QB498.2.U6U55 1986
"Serial O."

CONFERENCE PROCEEDINGS

Agricultural chemicals of the future: invited papers presented at a symposium held May 16-19, 1983, at the Beltsville Agricultural Research Center (BARC), Beltsville, Maryland. Edited by James L. Hilton. Organized by the BARC Symposium VIII Committee; sponsored by the Beltsville Agricultural Research Center, Northeastern Region, Agricultural Research Service, United States Department of Agriculture. Totowa, N.J., Rowman & Allanheld, 1985. 464 p. (Beltsville symposia in agricultural research, 8) S583.2.A374 1985

Communications and the future: prospects, promises, and problems. Edited by Howard F. Didsbury, Jr. Bethesda, Md., World Future Society, c1982. 357 p. P96.T42C62 1982
"Prepared in conjunction with the fourth General Assembly of the World Future Society, held in Washington, D.C., July 18-22, 1982."

Habitats tomorrow: homes and communities in an exciting new era: selections from the Futurist. Edited by Edward Cornish. Bethesda, Md., World Future Society, c1984. 160 p. HT119.H23 1984

New technology and the future of work and skills. Edited for BA Section X by Pauline Marstrand. London, Dover, N.H., F. Pinter, 1984. 260 p. HD6331.N48 1984

"Proceedings of a symposium organised by Section X at the annual meeting of the British Association for the Advancement of Science, August 1983."

Scientific forecasting and human needs: trends, methods, and message: proceedings of a symposium held in Tbilisi, USSR, 6-11 December 1981. Edited by Augusto Forti. Paris, UNESCO; Oxford, New York, Pergamon, 1984. 204 p. Q174.S336 1984

Essays presented at a symposium held in Tbilisi, USSR, as part of the Unesco programme on research and human needs.

Special Symposium on Critical Emerging Issues in Biomedical Engineering, Dallas, Tex., 1986. Proceedings of a Special Symposium on Critical Emerging Issues in Biomedical Engineering. Held concurrently with the Eighth Annual Conference of the IEEE Engineering in Medicine and Biology Society. Edited by Charles J. Robinson and George V. Kondraske. New York, Institute of Electrical and Electronics Engineers; Piscataway, N.J., order from IEEE Service Center, c1986. 92 p. R856.A2S69 1986

Symposium: Law of the Sea. Louisiana law review, v. 45, July 1985: 1143-1267. K12.0863

Partial contents:--Technology and the Law of the Sea.--The effects of fisheries law in the year 2010.--The effects of the Law of the Sea on future marine scientific research and of marine scientific research on the future of Law of the Sea.--Mining of the seabed in the year 2010.

ABSTRACTING AND INDEXING SERVICES that index relevant journal articles and other literature are listed below. Some suggested terms are given as aids in searching.

Applied Science & Technology Index (1913-) Z7913.I7*

See: Forecasts
Technological Change

Business Periodicals Index (1958-) Z7614.C81B983

See: Industrial Research
New Products
Technological Forecasting
Technological Innovations

Electrical & Electronics Abstracts (1903-) Z5833.E37*

See: Technological Forecasting

General Science Index (1978-) Z7401.G46*
See: Technological Innovations
Technology
Products, New

Magazine Index (1976-) Available on film/ROM reader
See: New Products
Science--Forecasts
Technological Forecasting
Technological Innovations
Technology and Civilization--Forecasts

Public Affairs Information Service. Bulletin (1915-) Z7163.P9
See: Medical Technology
Space Research
Space Technology
Technological Innovations

Readers' Guide to Periodical Literature (1900-) AI3.R45
See: Forecasting
Products, New
Technological Forecasting
Technological Innovations

Other indexes, listed here, should be used for an exhaustive search. Only a limited return can be expected for the time spent.

Index Medicus (1960-) Z6660.I42*
See: Technology Assessment, Biomedical--Trends
Technology, Medical--Trends
Technology, Pharmaceutical--Trends
Technology, Radiologic--Trends

International Aerospace Abstracts (1961-) TL500.I57*
See: Research & Development
Technological Forecasting
Technology Assessment

JOURNALS that often contain articles relevant to future technology are

Future Generations Computer Systems: FGCS QA75.5.F87
Futures HB3730.F8
Futures Research Quarterly Unbound issues in N&CPR
Futurics: a Quarterly Journal of Futures Research CB161.F793
The Futurist: a Journal of Forecasts, Trends, and Ideas About the Future CB158.F88
Technological Forecasting and Social Change T174.T38

Note: Consult reference librarian for location of abstracting and indexing services in the Science Reading Room.

REPRESENTATIVE JOURNAL ARTICLES

Boorstin, Daniel. Science as mythology. Science digest, v. 92, Dec. 1984: 82-83, 104. Q1.S383

Burruss, Robert Page. The long voyage from home. The Futurist, v. 21, Sept./Oct. 1987: 29-33. CB158.F88

Fernbach, Sidney. Supercomputers--past, present, and prospects. Future generations computer systems: FGCS, v. 1, July 1984: 23-30. QA75.5.F87

Garr, Doug. Tsukuba's expo salutes the world's best high tech in a razzmatazz fair of the future. Omni, v. 7, June 1985: 80-87. AP2.0452

Gilbert, Walter. Genome sequencing: creating a new biology for the twenty-first century. Issues in science and technology, v. 3, spring 1987: 26-35. Q124.6.I85

Kenward, Michael. Science's next decade. World press review, v. 32, Nov. 1985: 26-28. AP2.A833

Kravitz, Lee. Your future--and the world of tomorrow. Scholastic update, v. 119, Dec. 1, 1986: 7-9. AP2.S477

Loraine, John A. Contraception--the next 25 years. Futures, v. 18, August 1986: 526-535. HB3730.F8

The Next step: 25 discoveries that could change our lives. Science 85, Nov. 1985: 32-130. Q1.S354

Pirages, Dennis. World energy crisis 1995. Futures research quarterly, v. 2, fall 1986: 31-47. N&CPR

Sharon, Dan. Natural versus man-made technology. Futures, v. 18, August 1986: 542-548. HB3730.F8

Stanfield, John H. The possible problem of race in American and other western extraterrestrial settlements. Futurics, v. 8, no. 1, 1984: 21-22. CB161.F793

Wolkomir, Richard. Careers of the future. Omni, v. 7, Sept. 1985: 74-80. AP2.0452

TECHNICAL REPORTS and other types of literature are indexed in the following guides:

Government Reports Announcements & Index (1946-) Z7916.G78*

See: Technological Forecasting
Technology Forecasting
Technology Utilization